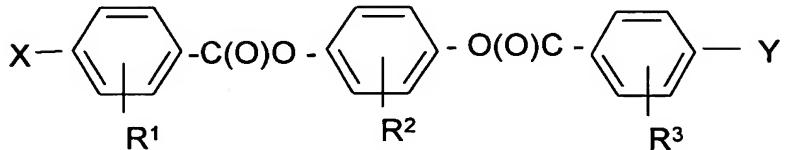


**We Claim:**

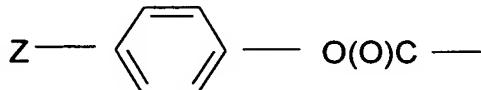
1           1.     Mesogens having the following general formula:



2

3 wherein

4 X and Y independently are selected from the group consisting of amino groups,  
5 polymerizable groups, and groups having the following general structure:



.6

7 wherein Z is selected from the group consisting of terminal functionalities and  
8 polymerizable groups; provided that when X is a polymerizable group, Y is an  
9 amino group;

10 R<sup>2</sup> is a bulky organic group having a bulk greater than R<sup>1</sup> and R<sup>3</sup> whereby, when both  
11 X and Y are polymerizable groups, said bulk is adapted to provide sufficient  
12 steric hindrance to achieve a nematic state at room temperature while  
13 suppressing crystallinity at room temperature, thereby providing effective  
14 rheology and workability at room temperature; and

15 R<sup>1</sup> and R<sup>3</sup> are selected from groups less bulky than R<sup>2</sup> adapted to maintain said  
16 nematic state.

1            2. The mesogens of claim 1 wherein said polymerizable groups are  
2 selected from the group comprising a polymerizable unsaturated carbon-carbon bond.

1           3. The mesogens of claim 1 wherein said polymerizable groups are  
2 selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy

3 alkoxy groups comprising an alkyl moiety having from 2 to 12 carbon atoms.

1       4.     The mesogens of claim 3 wherein said alkyl moiety is selected from  
2 the group consisting of alkyl groups consisting of CH<sub>2</sub> groups and alkyl groups  
3 wherein one or more of said CH<sub>2</sub> groups comprises a substitute group selected from  
4 the group consisting of oxygen, sulfur, and an ester group; provided that at least 2  
5 carbon atoms separate said oxygen from said ester group.

1       5.     The mesogens of claim 3 wherein said alkyl moiety consists essentially  
2 of a total of from 2 to 9 groups selected from the group consisting of said CH<sub>2</sub> groups  
3 and said substitute groups.

1       6.     The mesogens of claim 3 wherein said alkyl moiety consists essentially  
2 of a total of from 2 to 6 groups selected from the group consisting of said CH<sub>2</sub> groups  
3 and said substitute groups.

1       7.     The mesogens of claim 1 wherein R<sup>2</sup> is selected from the group  
2 consisting of alkyl groups having from about 1 to 6 carbon atoms and aryl groups.

1       8.     The mesogens of claims 1 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups, preferably selected from the group consisting of a methyl group  
4 and a t-butyl group.

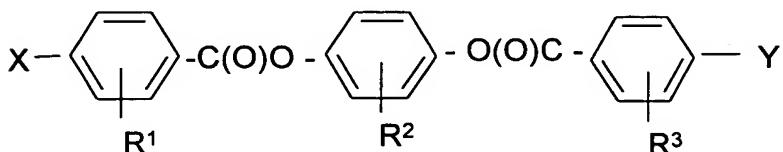
1       9.     The mesogens of claims 3 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups, preferably selected from the group consisting of a methyl group  
4 and a t-butyl group.

1       10.    The mesogens of claim 8 wherein R and R<sup>3</sup> are selected from the group  
2 consisting of hydrogen and a methyl group.

1           11.     The mesogens of any of claim 1 wherein said terminal functionalities  
2   comprise spacer groups.

1           12.     The mesogens of claim 1 wherein said terminal functionalities  
2   independently are selected from the group consisting of hydroxyl groups, amino  
3   groups, sulphydryl groups.

1           13.     Mesogens having the following general formula:



2           3     wherein

4     X and Y independently are selected from the group consisting of amino groups,  
5       polymerizable groups; provided that when X is a polymerizable group, Y is an  
6       amino group;

7     R<sup>2</sup> is a bulky organic group having a bulk greater than R<sup>1</sup> and R<sup>3</sup> whereby, when both  
8       X and Y are polymerizable groups, said bulk is adapted to provide sufficient  
9       steric hindrance to achieve a nematic state at room temperature while  
10      suppressing crystallinity at room temperature, thereby providing effective  
11      rheology and workability at room temperature; and

12   R<sup>1</sup> and R<sup>3</sup> are selected from groups less bulky than R<sup>2</sup> adapted to maintain said  
13      nematic state.

1           14.     The mesogens of claim 13 wherein said polymerizable groups are  
2   selected from the group comprising a polymerizable unsaturated carbon-carbon bond.

1           15.     The mesogens of claim 1 wherein said polymerizable groups are  
2   selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy

3 alkoxy groups comprising an alkyl moiety having from 2 to 12 carbon atoms.

1       16. The mesogens of claim 15 wherein said alkyl moiety is selected from  
2 the group consisting of alkyl groups consisting of CH<sub>2</sub> groups and alkyl groups  
3 wherein one or more of said CH<sub>2</sub> groups comprises a substitute group selected from  
4 the group consisting of oxygen, sulfur, and an ester group; provided that at least 2  
5 carbon atoms separate said oxygen from said ester group.

1       17. The mesogens of claim 16 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 9 groups selected from the group consisting of said  
3 CH<sub>2</sub> groups and said substitute groups.

1       18. The mesogens of claim 16 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 6 groups selected from the group consisting of said  
3 CH<sub>2</sub> groups and said substitute groups.

1       19. The mesogens of claim 13 wherein R<sup>2</sup> is selected from the group  
2 consisting of alkyl groups having from about 1 to 6 carbon atoms and aryl groups.

1       20. The mesogens of claims 13 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups, preferably selected from the group consisting of a methyl group  
4 and a t-butyl group.

1       21. The mesogens of claims 15 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups, preferably selected from the group consisting of a methyl group  
4 and a t-butyl group.

1       22. The mesogens of claim 20 wherein R and R<sup>3</sup> are selected from the  
2 group consisting of hydrogen and a methyl group.

1        23. The mesogens of claim 21 wherein R and R<sup>3</sup> are selected from the  
 2 group consisting of hydrogen and a methyl group.

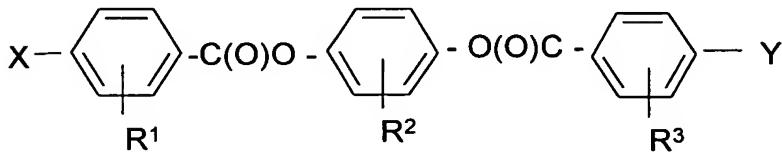
1        24. The mesogens of any of claim 13 wherein at least one of X or Y  
 2 comprises a spacer group.

1        25. The mesogens of any of claim 23 wherein at least one of X or Y  
 2 comprises a spacer group.

1        26. The mesogens of claim 13 wherein at least one of X or Y is selected  
 2 from the group consisting of cinnamoyloxy groups.

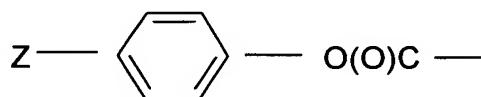
1        27. The mesogens of claim 23 wherein at least one of X or Y is selected  
 2 from the group consisting of cinnamoyloxy groups.

1        28. Mesogens having the following general formula:



2

3        wherein X and Y independently are selected from the group consisting of terminal  
 4        functionalities and polymerizable groups, at least one of X and Y having the  
 5        following general structure:



6

7        wherein Z is selected from the group consisting of terminal functionalities and  
 8        polymerizable groups;

9        R<sup>2</sup> is a bulky organic group having a bulk greater than R<sup>1</sup> and R<sup>3</sup> whereby, when both  
 10      X and Y are polymerizable groups, said bulk is adapted to provide sufficient  
 11      steric hindrance to achieve a nematic state at room temperature while

12        suppressing crystallinity at room temperature, thereby providing effective  
13        rheology and workability at room temperature; and

14      R<sup>1</sup> and R<sup>3</sup> are selected from groups less bulky than R<sup>2</sup> adapted to maintain said  
15        nematic state.

1            29.     The mesogens of claim 28 wherein said terminal functionalities  
2        independently are selected from the group consisting of hydroxyl groups, amino  
3        groups, sulphydryl groups, and spacer groups.

1            30.     The mesogens of claim 28 wherein said terminal functionalities  
2        comprise spacer groups.

1            31.     The mesogens of claim 29 wherein said terminal functionalities  
2        comprise spacer groups.

1            32.     The mesogens of claim 28 wherein said polymerizable groups are  
2        selected from the group comprising a polymerizable unsaturated carbon-carbon bond.

1            33.     The mesogens of claim 29 wherein said polymerizable groups are  
2        selected from the group comprising a polymerizable unsaturated carbon-carbon bond.

1            34.     The mesogens of claim 30 wherein said polymerizable groups are  
2        selected from the group comprising a polymerizable unsaturated carbon-carbon bond.

1            35.     The mesogens of claim 31 wherein said polymerizable groups are  
2        selected from the group comprising a polymerizable unsaturated carbon-carbon bond.

1            36.     The mesogens of claim 28 wherein said polymerizable groups are  
2        selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy  
3        alkoxy groups comprising an alkyl moiety having from 2 to 12 carbon atoms.

1            37.     The mesogens of claim 29 wherein said polymerizable groups are  
2        selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy

3 alkoxy groups comprising an alkyl moiety having from 2 to 12 carbon atoms.

1       38. The mesogens of claim 30 wherein said polymerizable groups are  
2 selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy  
3 alkoxy groups comprising an alkyl moiety having from 2 to 12 carbon atoms.

1       39. The mesogens of claim 31 wherein said polymerizable groups are  
2 selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy  
3 alkoxy groups comprising an alkyl moiety having from 2 to 12 carbon atoms.

1       40. The mesogens of claim 36 wherein said alkyl moiety is selected from  
2 the group consisting of alkyl groups consisting of CH<sub>2</sub> groups and alkyl groups  
3 wherein one or more of said CH<sub>2</sub> groups comprises a substitute group selected from  
4 the group consisting of oxygen, sulfur, and an ester group; provided that at least 2  
5 carbon atoms separate said oxygen from said ester group.

1       41. The mesogens of claim 37 wherein said alkyl moiety is selected from  
2 the group consisting of alkyl groups consisting of CH<sub>2</sub> groups and alkyl groups  
3 wherein one or more of said CH<sub>2</sub> groups comprises a substitute group selected from  
4 the group consisting of oxygen, sulfur, and an ester group; provided that at least 2  
5 carbon atoms separate said oxygen from said ester group.

1       42. The mesogens of claim 38 wherein said alkyl moiety is selected from  
2 the group consisting of alkyl groups consisting of CH<sub>2</sub> groups and alkyl groups  
3 wherein one or more of said CH<sub>2</sub> groups comprises a substitute group selected from  
4 the group consisting of oxygen, sulfur, and an ester group; provided that at least 2  
5 carbon atoms separate said oxygen from said ester group.

1       43. The mesogens of claim 39 wherein said alkyl moiety is selected from  
2 the group consisting of alkyl groups consisting of CH<sub>2</sub> groups and alkyl groups

3 wherein one or more of said CH<sub>2</sub> groups comprises a substitute group selected from  
4 the group consisting of oxygen, sulfur, and an ester group; provided that at least 2  
5 carbon atoms separate said oxygen from said ester group.

1       44. The mesogens of claim 43 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 9 groups selected from the group consisting of said  
3 CH<sub>2</sub> groups and said substitute groups.

1       45. The mesogens of claim 43 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 6 groups selected from the group consisting of said  
3 CH<sub>2</sub> groups and said substitute groups.

1       46. The mesogens of claim 26 wherein R<sup>2</sup> is selected from the group  
2 consisting of alkyl groups having from about 1 to 6 carbon atoms and aryl groups.

1       47. The mesogens of claim 35 wherein R<sup>2</sup> is selected from the group  
2 consisting of alkyl groups having from about 1 to 6 carbon atoms and aryl groups.

1       48. The mesogens of claim 39 wherein R<sup>2</sup> is selected from the group  
2 consisting of alkyl groups having from about 1 to 6 carbon atoms and aryl groups.

1       49. The mesogens of claim 43 wherein R<sup>2</sup> is selected from the group  
2 consisting of alkyl groups having from about 1 to 6 carbon atoms and aryl groups.

1       50. The mesogens of claim 45 wherein R<sup>2</sup> is selected from the group  
2 consisting of alkyl groups having from about 1 to 6 carbon atoms and aryl groups.

1       51. The mesogens of claims 26 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups, preferably selected from the group consisting of a methyl group  
4 and a t-butyl group.

1       52. The mesogens of claims 35 wherein R<sup>2</sup> is selected from the group

2       consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3       and phenyl groups, preferably selected from the group consisting of a methyl group  
4       and a t-butyl group.

1           53.     The mesogens of claims 39 wherein R<sup>2</sup> is selected from the group  
2       consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3       and phenyl groups, preferably selected from the group consisting of a methyl group  
4       and a t-butyl group.

1           54.     The mesogens of claims 45 wherein R<sup>2</sup> is selected from the group  
2       consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3       and phenyl groups, preferably selected from the group consisting of a methyl group  
4       and a t-butyl group.

1           55.     The mesogens of claims 43 wherein R<sup>2</sup> is selected from the group  
2       consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3       and phenyl groups, preferably selected from the group consisting of a methyl group  
4       and a t-butyl group.

1           56.     The mesogens of claim 46 wherein R and R<sup>3</sup> are selected from the  
2       group consisting of hydrogen and a methyl group.

1           57.     The mesogens of claim 50 wherein R and R<sup>3</sup> are selected from the  
2       group consisting of hydrogen and a methyl group.

1           58.     The mesogens of claim 51 wherein R and R<sup>3</sup> are selected from the  
2       group consisting of hydrogen and a methyl group.

1           59.     The mesogens of claim 55 wherein R and R<sup>3</sup> are selected from the  
2       group consisting of hydrogen and a methyl group.

1           60.     The mesogens of claim 26 wherein at least one of X or Y is selected

2 from the group consisting of cinnamoyloxy groups.

1        61.      The mesogens of claim 55 wherein at least one of X or Y is selected  
2 from the group consisting of cinnamoyloxy groups.

1        62.      The mesogens of claim 59 wherein at least one of X or Y is selected  
2 from the group consisting of cinnamoyloxy groups.